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(54) NON-AQUEOUS SOLVENT BATTERY

(57) Abstract:

PURPOSE: To enlarge a surface area, enhance liquid keeping characteristic, reduce inside resistance and increase a voltage capacity by using a carbon fiber as a conductive material.

CONSTITUTION: A carbon fiber having a diameter of 35-700Å and an aspect ratio of 100 or more obtained by a vapor phase epitaxial method is used as a conductive material for a positive electrode of a non-aqueous solvent battery. In manufacturing the carbon fiber, an $Fe(NO_3)_2$ solution is dropped into alumina powder, thus obtaining wet powder, followed by heating and drying by the use of a high temperature plate. The powder is dispersed as a catalyst inside a reactor. After being heated up to 500°C, the reactor is exposed to an argon atmosphere, and hydrogen is supplied. In this state, a temperature is raised to 1100°C. Benzene saturated hydrogen is supplied into the reactor, followed by cooling. The resultant carbon material is dispersed in ethanol, thus obtaining a carbon fiber having a diameter of 40-200Å. The carbon fiber, an active material and a binding agent are mixed in weight ratios of 5-15:80-94:1-5 respectively, to be molded into a pellet or the like, thereby obtaining a positive electrode mixture.

700 Angstrom

35 ~ 700 Angstrom = 3.5 ~ 70 nanometers